BACKGROUNDER: ONTARIO BEEKEEPING INDUSTRY THREATENED

MAY 15, 2018

Ontario beekeepers face a perfect storm from crop failure of the 2017 honey production, costs associated with rebuilding after excessively high colony mortality rates this winter, as well as loss of income from weakened colonies that will mean poor honey crop and loss of pollination income. This situation, as detailed below, requires immediate action to prevent the collapse of our industry.

1. Honey Crop Failure 2017 – At 4.5 million pounds, honey production in Ontario was down by 49.7% compared with 2016. Ontario Ministry of Agriculture, Food and Rural Affairs (OMAFRA) records note that at just 19.3 kg per colony, Ontario beekeepers harvested the lowest average per colony honey crop in the 35 years of reporting. This represents a drop in per hive production of 53% compared to 2016. Poor weather with rain during key bloom periods contributed to low yields, with colonies cutting back on brood rearing, irregular growth curves for varroa mite populations and continued pesticide pressure causing the crop failure. [1] [2]

2. According to OBA's recent overwinter survey, 72% of commercial beekeepers (who manage 50 or more hives) reported losses exceeding 20% this winter. It is generally agreed that 20% is the benchmark for sustainable losses. As well, 30% of commercial beekeepers reported losses in excess of 50%. High overwinter losses were not surprising given the weakened hive population in the fall following the dearth of honey and pollen, and despite aggressive fall sugar syrup feeding.

2017-2018 Overwinter losses per Ontario's commercial beekeepers

10% or less	10.71%
10 - 20%	17.86%
20 - 30%	13.10%
30 - 40%	15.48%
40 - 50%	13.10%
50 - 60%	5.95%
60 - 70%	10.71%
more than 70%	13.10%

3. In addition to overwinter losses, as of May, surviving colonies are at least four if not six weeks behind their normal spring build up. The winter and spring of 2018 were

[1] http://www.statcan.gc.ca/daily-quotidien/171213/dq171213d-eng.htm

[2] http://www.omafra.gov.on.ca/english/stats/hort/honey.htm

particularly severe and damaging for beekeepers, with record breaking cold weather in December and January and no temperature relief through March and April. Brood rearing – often starting as early as February – was delayed until warmer weather arrived in late April.

> "While dramatic swings in weather are a normal part of the season, this spring looks to have a particularly volatile mood. Weather during the early part of spring will leave many Canadians questioning the calendar as winter will maintain a strong grip on much of the country,"[3] said Chris Scott, Chief Meteorologist, The Weather Network.

4. The late spring will also delay and limit the production of Ontario queens, packages and nucs (nucleus colonies, comprising three to four frames of bees and a queen) needed to replace lost colonies. Mated queens needed for splits will not be available until June. Commercial queen breeders and nuc producers are in a sold out mode. Beekeepers attempting build up colonies by purchasing nucs will need to wait until July and forego their honey crop. Late splitting of surviving hives will reduce the strength of all colonies, resulting in low honey yields again this year.

5. Pesticide-related losses continue, with 40% of commercial beekeepers participating in the OBA survey saying they "suspect pesticides may have weakened their hives" as a reason for high winter losses.

   Neonicotinoids, a class of systemic, nicotine-based pesticides used as seed treatments on corn and soy, have been associated with bee deaths in Ontario since 2012. Recently, it was announced that the European Union will ban neonics, the world's most widely used insecticides, from all fields due to the serious danger they pose to bees.[4]

   Despite two growing seasons since the introduction of Class 12 legislation, the province has achieved only a 25% reduction and lags far behind its goal of an 80% reduction of neonic pesticides as seed treatment on Ontario field crops.

   It is important to note that pesticides are a contributing factor to overwinter losses, spring dwindling and fall colony crashing. While varroa mites in strong hives can be controlled by beekeepers, high mite and associated virus levels are often the result of colonies weakened by pesticide exposure.

6. Loss of Income from pollination services has also contributed to the pressure on Ontario beekeepers. The slow spring build-up limits opportunities for revenue from pollination services to Ontario vegetable and fruit growers who demand strong hives. Over production of blueberries relative to demand has reduced the need for Ontario bees by Maritime growers. Just two years ago, almost 40,000 Ontario hives (39% of Ontario's

[3] https://www.pelmorex.com/en/2018/02/from-a-wild-winter-to-wild-spring-spring-will-be-delayed-but-not-denied/

[4] https://www.theguardian.com/environment/2018/apr/27/eu-agrees-total-ban-on-bee-harming-pesticides

101,000 hives) were shipped to and from New Brunswick, Nova Scotia and Prince Edward Island. This year, less than half of that amount is expected to go East and as well, the price per hive is expected to be lower.

7. Both Agri Stability and Bee Mortality insurance have not served the industry and their take-up by beekeepers is minimal. These programs are inadequate, incorrectly priced or not able to accommodate calamitous losses and crop failure. Fixing these programs will be a priority and the subject of consultation sessions between OMAFRA and the OBA.

For these reasons, Ontario beekeepers struggle today to sustain their beekeeping businesses. Sadly, 28% of Ontario commercial beekeepers surveyed replied that: "If these losses continue, I cannot continue in the beekeeping business."

Without bees, Ontario would lose $897 million or more of agricultural crops grown in the province each year. This is equivalent to about 13 % of the province's total annual crop value but much higher when you consider fruits and vegetables. For example, honey bees are responsible for 90% of apple production in Canada. [5] [6]

An immediate support program, similar to the Beekeeper Financial Assistance Program of 2013 and 2014 is needed to keep beekeepers in business. [7]

Ontario beekeepers take pride in their role in supporting Ontario's agriculture and environment. This year will be challenging, but hopefully the industry will recover and thrive once more.

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[5] https://www.ontario.ca/page/pollinator-health

[6] http://www5.statcan.gc.ca/cansim/a26?lang=eng&retrLang=eng&id=0010009&&pattern=&stByVal=1&p1=1&p2=38&tabM

[7] https://www.ontariobee.com/sites/ontariobee.com/files/document/2015-Beekeepers-Fin-Assis-Pro-v4.pdf